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EXAMINER

GEBREMICHAEL, BRUK A

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ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

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DETAILED ACTION

1. The following office action is a **Final Office Action** in response to communications received on 07/01/2009. Claims 6-10 are pending in this application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- Claims 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saita 6,719,565 in view of Hamburg 6,028,583, in view of Fertig 2004/0239689, and further in view of Alpher 5,552,805.

Regarding claim 6, Saita discloses the following claimed limitations; a hair color simulation system for simulating a hair coloring procedure (col.2, lines 5-11), the hair color simulation system comprising a display section having a predetermined display area, a base screen displaying section displaying a base screen on the predetermined display area of the display section (FIG 2, label 4 and FIG 3); a hair color data storage section recording RGB values of original hair colors to be subjected to hair coloring (col.3, lines 1-11); a first hair line data storage section recording image data of a first hair line (col.2, lines 54-58); a first input section for receiving an input of a choice of one hair color from the original hair colors recorded in the hair color data storage section (col.4, lines 29-32); a first image displaying section displaying the first hair line with a

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predetermined transparency on the first layer of the base screen according to the image data recorded in the first hair line data storage section (FIG 2, label 4).

Saita does not explicitly disclose, the base screen comprising a first layer, an intermediate layer, a second layer, a third layer, a fourth layer, and a fifth layer; a hair color preparation data storage section recording RGB values of hair colors of hair color preparations; a second hair line data storage section recording image data of a second hair line which is different in line pattern and color from the first hair line recorded in the first hair line data storage section; a second input section for receiving an input of choices of two hair color preparations from the hair color preparations recorded in the hair color preparation data storage section and of a mixing ratio of the selected two hair color preparations; a second image displaying section retrieving the RGB values of the selected hair color from the hair color data storage section and displaying the selected hair color without transparency on the fifth layer of the base screen based on the input received at the first input section; a fifth image data displaying section displaying the second hair line with a predetermined transparency on the intermediate layer of the base screen according to the image data recorded in the second hair line data storage section; a third image displaying section retrieving the RGB values of the selected two hair color preparations from the hair color preparation data storage section and displaying the colors of the selected two hair color preparations with respective transparencies corresponding to the selected mixing ratio thereof on the third layer and the fourth layer of the base screen respectively based on the input received at the second input section; a fourth image displaying section retrieving the RGB values of the

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selected hair color from the hair color data storage section and displaying the selected hair color with a predetermined transparency on the second layer of the base screen based on the input received at the first input section; and wherein the first layer, the intermediate layer, the second layer, the third layer, the fourth layer, and the fifth layer of the base screen are superimposed on one another so as to display a resultant simulated hair color that is produced when the first hair line, the second hair line, the colors of the hair color preparations and the original hair color are displayed on the base screen with the respective transparencies and superimposed on each other.

However, Hamburg discloses an invention for utilizing layers in image manipulation that teaches, a base screen comprising a first layer, an intermediate layer, a second layer, a third layer, a fourth layer, and a fifth layer (see FIG 6 and also col.3, lines 65-67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Saita in view of Hamburg by incorporating a layering technique that utilizes image stacks with multiple layers in order to combine the color of each pixel in the different layers there by generating the required composited color, since such layer manipulation method gives flexibility for adjusting the transparency information required for the desired color; and also helps the user to blend any number of colors as required by reusing formerly generated colors thereby increasing the efficiency of the system.

Saita in view of Hamburg does not explicitly teach the following claimed limitations that are taught by Fertig; a hair color data storage section recording RGB

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values of original hair colors to be subjected to hair coloring (Para.0020, lines 4-7) a hair color preparation data storage section recording RGB values of hair colors of hair color preparations (Para.0013, lines 12-16); a second hair line data storage section recording image data of a second hair line which is different in line pattern and color from the first hair line recorded in the first hair line data storage section (Para.0013, lines 4-12).

Fertig further implicitly teaches a second input section for receiving an input of choices of two hair color preparations from the hair color preparations recorded in the hair color preparation data storage section (Para.0017, lines 3-11).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Saita in view of Hamburg and further in view Fertig by configuring the computer display to have multiple windows in order to display the colors to be selected in one pane, and the hair of the subject in a different pane so that the user would easily observe his/her hair image while choosing the preferred color combinations.

Note that Hamburg further implicitly teaches, a second image displaying section retrieving the RGB values of the selected hair color from the hair color data storage section and displaying the selected hair color without transparency on the fifth layer of the base screen based on the input received at the first input section; a fifth image data displaying section displaying the second hair line with a predetermined transparency on the intermediate layer of the base screen according to the image data recorded in the second hair line data storage section (FIG 7 and col.4, lines 8-12).

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Furthermore, limitation with regard to "a second hair line data storage section" is implicitly suggested by Fertig since one of ordinary skill in the art would readily recognize the fact from the teaching of the prior art that the computer system stores the first image and the second image separately before displaying or performing any color alteration.

Saita in view of Hamburg and further in view Fertig does not explicitly teach the following claimed limitations that are taught by Alpher: different color preparations are mixed based on a mixing ratio of the selected two color preparations (co1.1, lines 5-14), a third image displaying section retrieving the RGB values of the selected two hair color preparations from the hair color preparation data storage section and displaying the colors of the selected two hair color preparations with respective transparencies corresponding to the selected mixing ratio thereof on the third layer and the fourth layer of the base screen respectively based on the input received at the second input section (FIG 3A, label 3) ; a fourth image displaying section retrieving the RGB values of the selected hair color from the hair color data storage section and displaying the selected hair color with a predetermined transparency on the second layer of the base screen based on the input received at the first input section (FIG 3A, label 5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Saita in view of Hamburg, in view Fertig and further in view of Alpher in order to selectively blend two or more colors by adjusting the percentage contribution (i.e. mixing ratio) of each base colors for example using a pointing device such as mouse (Alpher col.4, lines 26-33) until the

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desired color is achieved, thereby making the blending operation user-friendly and very efficient so that the user would easily blend any type of colors to get a given desired result.

Hamburg further teaches, the first layer, the intermediate layer, the second layer, the third layer, the fourth layer, and the fifth layer of the base screen are superimposed on one another so as to display a resultant simulated hair color that is produced when the first hair line, the second hair line, the colors of the hair color preparations and the original hair color are displayed on the base screen with the respective transparencies and superimposed on each other (col.4, lines 34-49 and lines 60-65), whereby an actual hair color, which results from dyeing hair that has the selected hair color with a mixture of the selected two hair color preparations in the selected mixture ratio, is simulated.

Therefore, here also it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Saita in view of Hamburg in view of Fertig and further in view of Alpher by incorporating the layering technique taught by Hamburg in order to combine the color of each pixel in the different layers and then generate the required composited color, since such layer manipulation method gives flexibility for adjusting the transparency information required for the desired color; and also helps the user to blend any number of colors as required by reusing formerly generated colors, thereby increasing the efficiency of the system.

Saita in view of Hamburg in view of Fertig and further in view of Alpher teaches the claimed limitations as discussed above.

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Regarding claims 7 and 8, Alpher further teaches, the third image displaying section displays deeper colors of the selected two hair color preparations than the colors originally selected from the hair color preparation data storage section with the predetermined RGB values and with the transparency corresponding to the selected mixing ratio thereof (FIG 3A, label 3); the third image displaying section displays the color of one of the selected two hair color preparations on the third layer with a transparency which is lower than the transparency determined by the selected mixing ratio and the color of the other of the selected two hair color preparations on the fourth layer with a transparency which is higher than the transparency determined by the selected mixing ratio (col.3, lines 15-19 and col.4, lines 10-17).

Therefore, as already discussed above, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Saita in view of Hamburg, in view Fertig and further in view of Alpher in order to selectively blend two or more colors by adjusting the percentage contribution (i.e. mixing ratio) of each base colors for example using a pointing device such as mouse (Alpher col.4, lines 26-33) until the desired color is achieved, thereby making the blending operation user-friendly and very efficient so that the user would easily blend any type of colors to get a given desired result.

Regarding claim 9, Saita in view of Hamburg, in view Fertig and further in view of Alpher teaches the claimed limitations as discussed above.

Saita further discloses, the display area of the display section represents head hair of a model's face displayed by the display section (FIG 3).

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- Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saita 6,719,565 in view of Hamburg 6,028,583, in view of Fertig 2004/0239689, in view of Alpher 5,552,805 and further in view of Lei 2002/0054039.

Regarding claim 10, Saita in view of Hamburg, in view Fertig and further in view of Alpher teaches the claimed limitations as discussed above.

Saita in view of Hamburg, in view Fertig and further in view of Alpher does not explicitly teach, the line pattern and the color of the second hair line are selected so that each hair image is three-dimensionally displayed on the base screen to provide a more realistic display.

However, Lei discloses a head modeling invention that teaches, the line pattern and the color of the second hair line are selected so that each hair image is three-dimensionally displayed on the base screen to provide a more realistic display (Para.0015 and Para.0016).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the invention of Saita in view of Hamburg, in view Fertig, in view of Alpher and further in view of Lei by incorporating a three-dimensional processing technique (Lei FIG 3, step S4) in order to generate an image that looks like the subject's natural image (Lei Para.0026, lines 11-14) so that the user would have an accurate judgment of his/her look before he/she accepts the actual procedure, thereby giving the customer a chance to make a well informed decision.

Response to Arguments.

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3. Applicant's arguments filed on 07/01/2009 have been fully considered but they are not persuasive. In the remarks, Applicant argues that,

(1) The combination of the cited references would not have been obvious and the rejections cite portions of the cited references that are taken out of context.

Applicant notes that the rejection of claims 6-9 relies on the combination of all four of Saita, Hamburg, Fertig, and Alpher. Accordingly, all of the assertions of obviousness made in the rejection must be valid in order for the rejection to stand. Even if a single assertion of obviousness made in the rejection is incorrect, the rejections of claims 6-9 and 10 must be withdrawn ...

... The rejection asserts that the layer manipulation taught by Hamburg gives flexibility for adjusting transparency information required for the desired color and helps the user to blend any number of colors. The rejection does not assert or support that the combination of Saita and Hamburg teaches or suggests a particular number or arrangement of the layers or their contents (i.e. what they display), as recited in present claim 1.

- In response to argument (1), the Examiner respectfully disagrees. The prior art already teaches or suggests that a composited color is formed by combining colors of different image layers. That means, each image layer (e.g. see Hamburg, FIG 6, labels C, C-1, C+K) represents or displays a particular image layer with a particular color characteristic (e.g. a particular layer color and/or opacity value).

The reference also teaches that the prior art system displays color information of a given image layer as a function of position (i.e. based on the position of the image

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layer in the layer stack). For example the line, "Referring to FIG. 7, each image layer 52 includes an image *, 54, an optional image layer mask or masks 56, and **image layer compositing controls 58**, such as a global opacity 58a, a color blending effect, such as a transfer mode 58b, and a transparency treatment 58c. The **image 54** provides **color information** and, optionally, opacity information, **as a function of position**. Similarly, the mask or masks 56 provide opacity information as a function of position. Thus, **the image 54** and the mask 56 may be represented analytically or by pixels, and **may include image objects, graphical objects**, text objects, **and the like**. The transparency treatment is to the opacity information as the transfer mode is to the color information, i.e., it determines a new opacity from the opacity of the individual image layer 52 and the opacity of the composited underlying layers." (col.4, lines 8-22), teaches or suggests the fact that the prior art system does display color information for a given image based on the position of the image layer. In addition, it also allows one to control the color blending effect using the image layer compositing controls. Moreover, as already suggested in the above teaching, the image (FIG 7, label 54) may include any type of image objects (i.e. cloth image, hair image, etc.)

The reference further suggests that a particular arrangement of the layers (e.g. blending two or more layers) generates a particular composited layer. For example, as shown in FIG 6, compound layer 62 is formed by arranging image layers C, C+1 ... C+k. That means, compound layer 62 represents or displays a particular arrangement of the image layers or their contents (i.e. image layer 62 displays the particular arrangement of layers C, C+1 ... C+K).

Therefore, the Examiner concludes that Applicant's currently presented claimed limitations have already been taught or suggested by the prior art.

(2) The rejection further asserts that, after modifying Saita according to Hamburg, it would have been obvious further modify that combination according to Fertig by configuring the display to have multiple windows to display the colors to be selected in one pane and the hair of the subject in a different pane so that the user would easily observe his/her hair image while choosing the preferred color combinations. One wishing to modify Saita would not have looked to Fertig because Fertig teaches that still images look static and unnatural and that this is a disadvantage with regard to hair color consultations ([0003]). The advantage of dynamic video images over static images is clearly expressed in paragraph [0005]. Contrary to the assertions made in the rejection, Fertig does not teach any correlation between colors seen in the modified video and any prepared dye or combination of dyes.

- In response to argument (2), the Examiner respectfully disagrees. In fact, contrary to the Applicant's assumption, one of ordinary skill in the art would certainly modify Saita's system based on the teaching of Fertig since Fertig's reference explicitly states the drawbacks of Saita's system, and teaches the improvement made to overcome the drawbacks. That means, one does not have to examine Saita's system in detail since Fertig's reference explicitly identifies the problems associated with Saita's system, and provides remedies to rectify the problems; thereby motivating the artisan to modify Saita's system based on Fertig's teaching.

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Note that anyhow, it should be noted that when modifying a given primary reference with a secondary reference under 35 U.S.C. 103(a), the modification does not necessarily involve the incorporation of the entire structure of the secondary system.

“The **test for obviousness is not whether the features of a secondary reference** may be **bodily incorporated** into the structure of the primary reference.... Rather, the test is **what the combined teachings** of those references **would have suggested to those of ordinary skill in the art.**” In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). That means, the artisan would modify the primary system based on one or more features taught or suggested by the secondary reference(s) without the need to incorporate the entire structure of the secondary system.

Thus, as clearly indicated in the previous office action (see Page 5, lines 13-22 and Page 6, lines 1-12), the motivation for incorporating Fertig's teaching is not due to the nature of the image discussed in the reference (i.e. whether the image is static or dynamic); rather, for example the configuration of the display window that allows one to display the *hair image* on one section, and the *hair color palette* on another section of the display monitor (e.g. see FIG 3, labels 36 and 47). It appears that Applicant has misunderstood (misinterpreted) the modification involved when incorporating Fertig's reference.

Therefore, the examiner concludes that Applicant's currently presented claimed features have already been taught or suggested by the prior art.

(3) The rejection asserts that Fertig teaches a hair color preparation data storage section recording RGB values of hair colors of hair color preparations (as recited in

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present claim 1) in paragraph 13, lines 12-16. The cited passage, however, makes no mention of recording the colors or RGB values of hair color preparations, dyes, or pigments of any kind ...

... The rejection asserts that Fertig teaches a second input section for receiving an input of choices of two hair color preparations from the hair color preparations recorded in the hair color preparation data storage section in paragraph 17, lines 3-11 ... there is no reference to any kind of hair color preparation, only to a color palette, which does not correspond to any hair color preparations, dyes or pigments ...

- In response to argument (3), the Examiner respectfully disagrees. First of all, one of ordinary skill in the art would readily recognize that Fertig's reference is in the field of hair color blending; and therefore, whether the reference has mentioned specific dyes or pigments is irrelevant since it is well known in the art that the artisan would use any preferred dye or pigment that is suitable for hair coloring when using the prior art invention. Here, the reference does not have to provide detail explanation regarding subject matters that are very routine and well known in the art.

Regarding receiving input of choices of two hair color prevarications, the color palette discussed in the reference is used to select a hair color that the user (or the hair dresser) wants to simulate. Note that when the user selects the colors from the color palette, the displayed hair changes its color based on the colors selected until the user gets the desired hair color, and this process suggests mixing the color selections with the natural hair color identified (Para.0013, lines 12-20).

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In addition to this, Alpher also discloses such a method and system for displaying blended colors that teaches the claimed feature, “a second input section for receiving an input choices of two hair color preparations ...”. For example, Alpher’s system illustrates a rectangular bar display region having two edge portions (FIG 3A, labels 3 and 5), each representing different base colors that are going to be blended. Note that in order to determine whether the prior art teaches or suggests a given claimed feature(s), the combined teaching of all the references applied in the rejection must be considered without a *piecemeal* analysis.

Regarding the claimed feature “displaying the selected hair color without transparency on the fifth layer ...”, Hamburg already suggests this feature since the prior art system allows the user to control **the transparency of each image layer** (col.4, lines 8-12 and FIG 7). That means, the artisan is able to display any required image layer (1st, 2nd ...5th, etc.) with a predetermined transparency, or without any transparency depending on the specific purpose.

Therefore, here also the Examiner concludes that the prior art teaches or suggest Applicant’s currently presented claimed features.

(4) The rejection asserts that Alpher teaches a method and system for displaying blended colors in which different color preparations are mixed in a mixing ratio of the selected two color preparations in column 1, lines 5-14. As can be seen in the referenced paragraph reproduced below, there is no mention in Alpher of color preparations (i.e. hair colorants or hair dyes) at all. The methods taught by Alpher are

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limited only to colors on a computer monitor and have nothing to do with any corresponding hair color preparations.

There is no teaching or suggestion in any of the cited references for arranging first through fifth image displays are layered in the manner specified in claim 1.

References to layers of images in the rejection are based solely on Hamburg and the rejection provides no reasoned statements whatsoever with regard to how one would have combined the cited references to arrive at the arrangement of superimposed layers specified in present claim 1.

- In response to argument (4), the Examiner respectfully disagrees. As briefly discussed above (see response to argument (3)), Alpher already teaches a system that allows a user to select two or more base colors, and display a composite image based on the mixing ratios of the selected base colors (col.1, lines 7-13 and col.4, lines 10-17). Here also, the reference does not have to necessarily mention specific type of colors (e.g. hair colorants or hair dyes as the Applicant has attempted to argue) since the prior art system is capable of being used for any type of color blending. That means one of ordinary skill in the art would use the teaching of the prior art to simulate any type of color blending.

Applicant further argued that Alpher's system is limited only to colors on a computer monitor. However, as it is evident from the disclosure and the current claims, the current invention also involves simulation of hair colors using computer generated images. Thus, similar to the prior art, no actual hair colors or dyes are involved in the current invention.

Therefore, the Examiner concludes that Applicant's currently presented claimed features are already taught or suggested by the prior art.

Conclusion

Applicant's amendment necessitated the new grounds of rejection presented in this final office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filled within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bruk A. Gebremichael whose telephone number is (571)270-3079. The examiner can normally be reached on Monday to Friday (7:30AM-5:00PM) ALT. Friday OFF.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, THAI XUAN can be reached on (571) 272-7147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Examiner, Art Unit 3715

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